Meeting Minutes for Digital Inclusion workshop coordinated by IIT Mumbai

Date: 5th of February 2014, Wednesday
Time: 15:00 to 18:30 hrs.
Venue: F/South Ward office, Conference Hall,
Jn. of Dr. Ambedkar Road and J. Bhatnagar Marg, Parel, Mumbai 400012

Attendees:

<table>
<thead>
<tr>
<th>Name</th>
<th>Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>R. Balachandran</td>
<td>Nodal Town Planning Officer, MCGM</td>
</tr>
<tr>
<td>Dinesh Naik</td>
<td>Assistant Engineer, DP, MCGM</td>
</tr>
<tr>
<td>Abhay Karandikar</td>
<td>Professor and Head, Department of Electrical Engineering IIT-Bombay</td>
</tr>
<tr>
<td>Pankaj Joshi</td>
<td>Executive Director, UDRI</td>
</tr>
<tr>
<td>Dr. Anita Patil-Deshmukh</td>
<td>Executive Director, Pukar</td>
</tr>
<tr>
<td>Siddharth Pandit</td>
<td>UDRI</td>
</tr>
<tr>
<td>Omkar Gupta</td>
<td>UDRI</td>
</tr>
<tr>
<td>Kaiwan Elavia+ 2</td>
<td>UDRI</td>
</tr>
<tr>
<td>Shrutika Shitole</td>
<td>Pukar</td>
</tr>
<tr>
<td>Sadhana Guldagad</td>
<td></td>
</tr>
<tr>
<td>Shikha Pandey</td>
<td>Majlis</td>
</tr>
<tr>
<td>Krithi Ramanathan</td>
<td>IIT Bombay</td>
</tr>
<tr>
<td>Sudhir Badami</td>
<td></td>
</tr>
<tr>
<td>Gurujeet Singh</td>
<td>Student Journalism</td>
</tr>
<tr>
<td>Veena Takele</td>
<td>SCE</td>
</tr>
<tr>
<td>Vasant patil</td>
<td>Indivisual</td>
</tr>
<tr>
<td>Shruti Menon</td>
<td>Narotam Sekhseria Foundation</td>
</tr>
<tr>
<td>Ar. Rahul Mayekar</td>
<td>MCGM</td>
</tr>
<tr>
<td>Sukhatme Shirish</td>
<td>PEATA (PRESIDENT)</td>
</tr>
<tr>
<td>V.S.Sahare</td>
<td>MCGM</td>
</tr>
<tr>
<td>Name</td>
<td>Institution</td>
</tr>
<tr>
<td>-----------------------</td>
<td>------------------------------------------</td>
</tr>
<tr>
<td>A.D.Kshirsagar</td>
<td>MCGM</td>
</tr>
<tr>
<td>Irene N</td>
<td>Sir J.J. College of Architecture</td>
</tr>
<tr>
<td>Sitaram Shelar</td>
<td>YUVA</td>
</tr>
<tr>
<td>Unmesh Chaphekar</td>
<td>MTSU</td>
</tr>
<tr>
<td>Sanjay M.</td>
<td>BMC</td>
</tr>
<tr>
<td>Tejal Shitole</td>
<td>Pukar</td>
</tr>
<tr>
<td>Kiran Sawant</td>
<td>Pukar</td>
</tr>
<tr>
<td>Anagha Kamat +1</td>
<td>Journalism Mentor</td>
</tr>
<tr>
<td>Sanjay Kadam +2</td>
<td>Pukar</td>
</tr>
<tr>
<td>Afrel</td>
<td>Majlis</td>
</tr>
<tr>
<td>Arnob Jon</td>
<td>IITB</td>
</tr>
<tr>
<td>Pruja Warekar</td>
<td>CAT</td>
</tr>
<tr>
<td>Sabu Francis</td>
<td>Individual</td>
</tr>
<tr>
<td>Ashwini Thakar</td>
<td>Bombay First</td>
</tr>
<tr>
<td>Nagendra G. Mirajkar</td>
<td>Dy Mumbai Port</td>
</tr>
<tr>
<td>Sushil Shinde</td>
<td>Tarai Foundation Trust</td>
</tr>
<tr>
<td>Ravina Aggarwal</td>
<td>Individual</td>
</tr>
<tr>
<td>A.V. Shenoy</td>
<td>MVS</td>
</tr>
<tr>
<td>Alok Thakor</td>
<td>Citizen</td>
</tr>
<tr>
<td>Mahesh V. Bafna</td>
<td>Citizen</td>
</tr>
<tr>
<td>Munjal Savla</td>
<td>Citizen</td>
</tr>
<tr>
<td>Vibha Kaushal</td>
<td>Citizen</td>
</tr>
<tr>
<td>Prakash Angane</td>
<td>Janata Jagruti Munch</td>
</tr>
<tr>
<td>Meera Malegaonkar</td>
<td>BDH</td>
</tr>
<tr>
<td>Manoj Jeikar</td>
<td>MCGM</td>
</tr>
</tbody>
</table>
Minutes:

1. Mr. Abhay Karandikar, (Professor and Head, Department of Electrical Engineering IIT-Bombay) opened the session stating the intent of the workshop, goal for Digital Inclusion with Universal access to Broadband, Information and communication Infrastructure, in Mumbai Development Plan, 2014-34.

2. Executive Director (ED), UDRI during his presentation stated the following:
   - Gaps exist in the optimum and existing levels of landuses in revision of Mumbai Development Plan (2014-34)
   - Future urban paradigms are equitable and inclusive development with knowledge economies, collaboration, responsive governance, efficiency, crowdsourcing. These demands for digital inclusion in information and communication infrastructure with focus on broadband penetration in slums/low income households in city.
   - Section 22(d) – Maharashtra Regional and Town Planning Act 1966. Mentions the extension and development of Transport and Communication Infrastructure.
   - During Development Plan of 1981-2001, MCGM has introduced and implemented telephone exchange / service centres. These interventions made a remarkable increase in telephone penetration in households in the following 20 years.
   - Similarly Development Plan for 2014-34 will need to have digital and broadband infrastructure. Because,
     - Universal access to knowledge, essential services and health facilities using internet technologies will lead to better quality of life.
     - Higher productivity for economic development.
     - Critical response in disaster management.
     - Efficiency in government data sharing and integration of resources.
     - Increased public participation.
   - Applications to Mumbai will be in various aspects like, education, health, disaster management, transportation, livelihood, governance, etc.
   - Elaborated these aspects stating its shortfalls and opportunities along with similar case studies.
   - MCGM will have to take an active role in
     - Creating a citywide middle mile infrastructure of optical fiber that would be enable access to internet
     - Making available of public and civic data publicly accessible on internet and multilingual
   - Suggested consolidated planning principles derived through various stakeholder’s meetings
     - NECESSITY & DEMAND: Slums, low income households, 5 year implementation time frame, Universal access to broadband - Citizen’s Right
     - IMPLEMENTATION GOALS: Municipal schools, libraries, fire stations, parks, transportation facilities, sewage treatment plants, 24*7 connectivity, Disaster Management, Private, municipal and public access points to broadband infrastructure.
ROLE OF MCGM: MCGM- Owner of Municipal Broadband, Right of Way Issues, MCGM - Online citizen services and Municipal Data, MCGM- Planning and Monitoring, Public – Private Partnerships

INFRASTRUCTURE: Scalable, Middle Mile – Citywide Optical Fiber, Technology Adaptable, 20 year usable timeframe.

OPEN PUBLIC DATA: Education, Healthcare, Transportation and Governance, All MCGM Data and services online, Efficiency, reduced wastage and corruption, improve internal working of MCGM.

• Suggested approximate citywide landuse requirement:
  o Fiber optic service network that connects fiber to the curb (FTTC).
  o Mobile Switching Centers: 500 sq.m for every 3 wards = 4000 sq.m city wide
  o Network Operations Center: 3000 sq.m

• Suggested Development Control Regulations:
  o New development/redevelopment proposals to incorporate optic fiber network
  o Public access points for broadband network in informal settlements & urban villages
  o Broadband connectivity and municipal wi-fi in Public spaces.
  o Fiber optic connectivity to all municipal services and ward offices.

• Planning for future demands of broadband in advance Ad-hoc development can be avoided.

3. Dr. Anita Patil- Deshmukli, Executive Director - PUKAR, presented following findings of the study focusing on access to internet in low income communities of city. (Case of Gazdhar Bandh, H-West Ward, population of 50,000 and area of 2.5 Sq. Km).

• PUKAR’s role essentially was to bring to sharp focus the digital divide that exists in the poor income neighborhoods and the aspiration and needs of the marginalized people in relation to internet access
• Various services are available on internet but urban poor can not avail them due to lack of internet access which ultimately is leading to discrimination in society.
• 65% of households in city are in low income group.
• Findings of survey conducted within 459 households and 1377 individuals in selected area:
  o 85% people do not have internet at home
  o Most people earned between Rs.1000-15000 and are willing to spend between Rs 100-800 per month on internet. Average spending is Rs. 576 on internet.
  o While some of the critical services like admissions, results, applications for jobs and various identity cards are available on internet most poor people do not have an easy and affordable access to internet.
  o While 78 % people in this slum have heard about internet, 58% of those could not use it. 95% users belonged to age group of 14-30 years and as is the case with rest of domains, the gender divide continues within the digital divide as well with only 26 % female using internet while 74 % male usage.
  o Young male population is the major user of internet in the form of 2G network on mobile, which do not allow them to access to e-services provided by MCGM.
Most of the time the youth used internet for downloading either for entertainment or for school related projects (479 out of 584 respondent) and social networking (477 out of 584). Very few could use it for any services (120 out of 584).

When asked why they do not use mobile for other things, three reasons came through. First was related to speed. Most mobile phones with a package provide 2G services, which do not allow them to use it for anything else due to very slow speed. The 3G mobile packs are unaffordable to majority of the youth. So they all end up using other avenues for Internet access. Those were cybercafé (163/584) schools or colleges (142/584), offices (109/584). Those who could not access these services at schools or offices also could not access them at cybercafés.

People cannot use Internet as only 2 cyber cafes are in the locality outside 1.5km radius, inaccessible and unsafe to female users.

95% people think that MCGM has a role in providing affordable Internet.

87% people are willing to use internet provided in community areas and willing to pay for it.

Majority of them wanted it is a form of kiosk and they wanted it in an open space.

Dr. Patil-Deshmukh shared the information about all the services that are currently available on the internet and emphasized the fact that while some of the critical services like admissions, results, applications for jobs and various identity cards are available on internet most poor people do not have an easy and affordable access to internet.

- **Recommendations for DP**
  - Making Universal and Affordable Broadband Internet as an Obligatory responsibility of MCGM
  - Allocating space in the DP for building such networks in all communities especially low income households of Mumbai.

4. Mr. Abhay Karandikar, (Professor and Head, Department of Electrical Engineering IIT-Bombay), presented technical aspects of implementing universal broadband within the city.

- **The presentation focused on**
  - Broadband Network
  - Current scene in Mumbai
  - Role of MCGM in DP related to internet
  - Case Studies
  - Planning
Currently, there are 15 million broadband connections in the country. He mentioned that TRAI's roadmap predicts 600 Million broadband connections in the country by 2020. In general, averages in Metro like Mumbai are expected to be higher than national average. Thus, he emphasized that by 2030, Mumbai should aim for universal broadband access for every household. By 2030, a city wide network is expected to connect all residential and commercial establishments, public wifi-spots and public safety and disaster management network including 24 hour video surveillance.

If broadband speed of 2 Mbps as outlined in National Telecom Policy 2012 (which admittedly is a conservative estimate for 2030) was assumed, Prof Karandikar illustrated that universal access would require a whopping capacity of 50 Gbps/sq km in many areas of Mumbai with high population density even with such conservative estimates. He illustrated that this cannot be achieved with current cellular deployment of macro cells. The future evolution of wireless system is likely to be in the form of micro, pico and femto cells (collectively called small cells) which would be low power nodes with high spectral efficiency.

He outlined the vision of providing fiber to the curb and Small Cell deployment of wireless nodes for meeting the high capacity requirements of broadband to every household in Mumbai.

He informed that from DP perspective, MCGM has the following points of intervention-
- Right of Way for Fiber
- Creating Middle-Mile Network
- Zoning and Land use for Tower and Switching Infrastructure
- Building code for enabling broadband.

He further elaborated that MCGM should create the concept of Telecom Corridors, lay conduits and tranches, build middle mile network and rent/lease the corridor to the service providers.

Further, MCGM should mandate builders to provide ducts for optical fiber during construction itself. This would also enable In-Building solution. MCGM should also map all underground utilities including fiber ducts and should make it available for all service providers.

In order to provide universal access for citizen services, MCGM should plan for providing free public hotspots, community kiosks and centers in designated locations. Mumbai DP should aim to provide broadband for citizen services in underserved locations and areas of the city as one of the most important charters.

Mumbai DP should plan for Municipal broadband network. The municipal broadband networks can be overlaid over the same telecom corridor as outlined above. It should provide high speed connectivity to all municipal schools, hospitals and ward-offices. It can also act as the backbone for public safety and disaster management including Fire Brigade, Police and Ambulances.

He also emphasized that municipal interventions for universal access have been carried out in several cities of the world. He presented two case studies of Stockholm and Oregon.

Finally, he illustrated by taking example of Mumbai H /East ward that it is indeed possible to conceptualize Telecom Corridor which can also be used for Municipal broadband network. Further details of implementations can be worked out with detailed studies. However, he submitted that Mumbai DP for 2030 should outline the vision for Broadband for All.
5. Mr. Krithi Ramamritham, Head of Centre for Urban Science and Engineering, presented challenges in bridging the information gap through digital inclusion. The highlights of the presentation are as follows:

- Connectivity divide—there is no connectivity or low bandwidth
- Content divide—no relevant content, not accessible, not updated, language barriers.
- Interfaces are not user friendly.
- Main challenges are type of information to be provided, sources of information, process of getting information, department involved, time and fees required.
- Listed and categorized citizen services into one time information, continuous, paid, free etc.
- Suggested citizens mobile applications based on crowdsourcing.
- Four components of information—Location, Visuals, Annotations, Category of problems.
- Suggested integrated approach through Planning and Design, Policy and Governance, Infrastructure, Informatics for better quality of life.
- He shared a few ideas related to technology based innovation like Mumbai Navigator that shows maps of the city with various bus and train routes and makes commuting much easier. He suggested that technology needs to innovate and make the quality of life better for the citizens.

6. Mr. Alok Thakur, academician, journalist and citizen, quoted Section 22(e)—chapter-3 from Maharashtra Regional and Town Planning Act 1966, to explain the possibilities to incorporate Internet in future Development Plan. This clearly mentions the right to common man for public utility.

- The Act defines amenities and public utilities as public necessities, provision of Internet infrastructure can be justified as this is the future necessity of every citizen.
- Currently the Internet facilities are seen as need of certain class of people, but Internet facilities provided by MCGM will make such public services and can be reached to larger population.
- Suggested provision of such Public utilities in Landuse Planning is the basic requirement.
- Suggested to provide dark fiber to every household in similar way MCGM has provided water supply, sewerage lines and other infrastructure.
- Requested MCGM to have foresight and visionary attitude for Development Plan by clearly defining amenities responding to future necessities on people.

7. Mr. A.V. Shenoy, Mumbai Vikas Samiti, suggested providing facilities of higher standards keeping the vision for 2030.

- MCGM should restrict its role in data maintenance and provision of basic network by providing primary and secondary server in respective wards and use existing laid network by privet companies to reach up to every household.
- Stated hazards on health due radiation of Wi-Fi and mobile network should be considered while planning, Micro Cell technology is ideal solution.

8. Prof. Abhay Karandikar stated that principle concept of having right of way for broadband network is the priority, the implementation issues and strategies can be worked out in order to achieve standards.
• Mentions the low power Wi-Fi network is low on radiation hazards and economic.
• Stated that the new buildings should have a Code/DCR to have optical fiber network and policies can be worked out to provide network in existing buildings
• Providing Internet connectivity without the intervention of MCGM will not be citywide approach.

9. Mrs. Mira Mategaokar, citizen, stated that Development Plan should map the location of towers, and should give guideline in order to regulate radiation hazardless Broadband network. National level housing schemes should also include the provision of Broadband network in community.

10. Mr. Chaitanya Mehta, citizen, mentions opportunities and importance of technology and broadband in encouraging entrepreneurship in city which helps in economic development and contributes in GDP growth.

11. Sabu Francies, Architect & Software developer, suggests having a policy for crowdsourcing to implement the city wide broadband network. This will enable to connect the city without big efforts by single implementing authority. And to have incentives to individuals for contributing to City wide network.

12. Executive Director (ED), UDRI states that formal city can contribute in crowdsourcing but the informal city cannot be crowd-sourced for such infrastructure leading to exclusion.
   • Vision document requires to promising for Digital infrastructure when it mentions to have a global inclusive city by 2034.
   • Right of way for Broadband network has to be mention in Development plan.
   • All Municipal services to be connected via Internet.

13. Director of Public Forum, UDRI stated that basic Digital infrastructure should be provided by MCGM in similar way that basic water supply lines are provided by MCGM.

14. Mr. Sudhir Badami, Activists & citizen, mentions the importance of online services like ticket booking which has a remarkable economic value in saving time of travel, saving working hours in commuting at the location of service.
   • Also mentions the importance demarcating digital infrastructure on DP, in similar way MCGM has shown the future metro and monorail line.

15. Nodal Town Planning Officer, MCGM, stated to accept this new concept of Digital infrastructure, this will come under utility like many other utilities provided by MCGM,
   • There is no hindrance in implementing broadband infrastructure without including it in Development Plan, as road network is demarcated in DP, Broadband network can be laid below them, as there is no particular norm which prevents to have internet network below roads.
   • MCGM has a separate information technology department; they can manage the policies regarding the broadband networks in city.
• DP-MCGM will make policy recommendations for including broadband and digital inclusion in Development Plan.
• MCGM will consider the digital policy and zoning in terms of location of these facilities in Development Plan.
• Network organization centres should be planned by separate agency in respective ward, it may not fall in Development plans Scope. In case it needs to integrate with Development Plan, MCGM will need to have inputs from separate agency showing, mapping the locations for such infrastructure. In previous years MTNL had suggested MCGM the desired locations of Telephone exchange in DP.
• Development plan can provide Building Code to facilitate Broadband Infrastructure.
• MCGM will include such digital infrastructure requirements in Development Plan report.

16. Engineer DP, MCGM, mentioned that detailed inputs from concern department have to come to development plan department regarding Digital Infrastructure.
• Since the plan is for 20 years the land use will demand for changes so Development plan cannot have inflexible policy and demarcated infrastructure.
• Agreed to give enabling provisions for broadband infrastructure in development Plan.

17. Meeting conclude at 18.20 Hrs.

X-------------------------End of Document-------------------------X